MODEL 141

Microphone Power Supply/Amplifier Module

INSTRUCTION MANUAL

B&K INSTRUMENTS, INC.
Bruel & Kjaer Precision Instruments
5111 WEST 164th STREET • CLEVELAND, OHIO 44142
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1. GENERAL INFORMATION

1.1 The Model 141 Microphone Power Supply/Amplifier Module is designed for outdoor application and, as such, provides polarizing and anode voltages for the 4134 microphone and 2619 pre-amplifier and in addition, contains a 30 dB line drive amplifier. The batteries are of the nickel-cadmium type and can be recharged from a remote location by connection to proper connector pins. The entire unit is moisture sealed, tripod mounted, and can be operated in remote locations for periods of 400 hours before recharging of batteries is required. A means is provided for remote sensing of battery voltage indicating when charging is required.

1.2 Specifications

1.2.1 Noise: Less than 100 microvolts referred to input - 30 dB setting.

1.2.2 K Factor: ±6 dB

1.2.3 Frequency Response: 20 Hz to 20 kHz ±.5 dB

1.2.4 Gain Factor: 0, 10, 20, 30 dB, Switch selected

1.2.5 Output Impedance: Less than 10 ohms

1.2.6 Battery Life: 400 hours before recharge

1.2.7 Size: Module / 7 x 13 x 7 - Microphone Height adjustable from 50" to 70"

1.2.8 Output Current: -20 mA peak.

1.3 Control Description

1.3.1 "K" Factor: Adjusts attenuation ±6 dB

1.3.2 Gain Factor: Selects one of four gain settings 0, 10, 20, 30 dB

1.3.3 Output Connector: Provides two connector pins for output signal as well as 2 pins for battery charging.

1.3.4 Input Connector (Rear): Accepts signal from 2619 Pre-amplifier

2. INSTALLATION

2.1 The 141 is shipped in three sections, tripod base, amplifier module and microphone stand. Unfold tripod and lock legs in place. Place pointed tip into ground at angle and press firmly into ground until all foot pads are in contact with ground. Set module on tripod top, mating rubber feet with hole plate and push unit in direction which will lock unit on plate. Screw microphone stand into socket and mount microphone to stand. Insert 2619 into seven pin socket (rear) allowing a drip loop to be formed by cable in order to exclude water from entering through 2619 cable entry.

3. OPERATION

3.1 After installation requirements of paragraph 2.1 have been met, set "gain-dB" switch to "power-off" and connect output cable to output connector. Use pins C and E, pin E is ground terminal

3.1 and pin C is amplifier output. Depending on value of terminating load, a small value of D.C. voltage may be present in which case A.C. coupling should be employed at the terminating end of cable if the D.C. level is objectionable.

3.2 Calibration - Since the 4134 is being operated at reduced polarizing voltage (28 V), the loss in sensitivity will be approximately -18 dB. Taking this factor into account, calibration of the system with a 4220 pistonphone will yield approximately 47 mV at "0" dB gain setting and 1.5 volts at the 30 dB gain. For ease in conversion of volts to dB-SPL, it is suggested that at the time of calibration, adjust "K" factor for a 1.58 volt reading for the 124 dB-SPL output of the pistonphone. This will then read out as 1 volt for 120 dB SPL and all further conversions will be relatively simple.

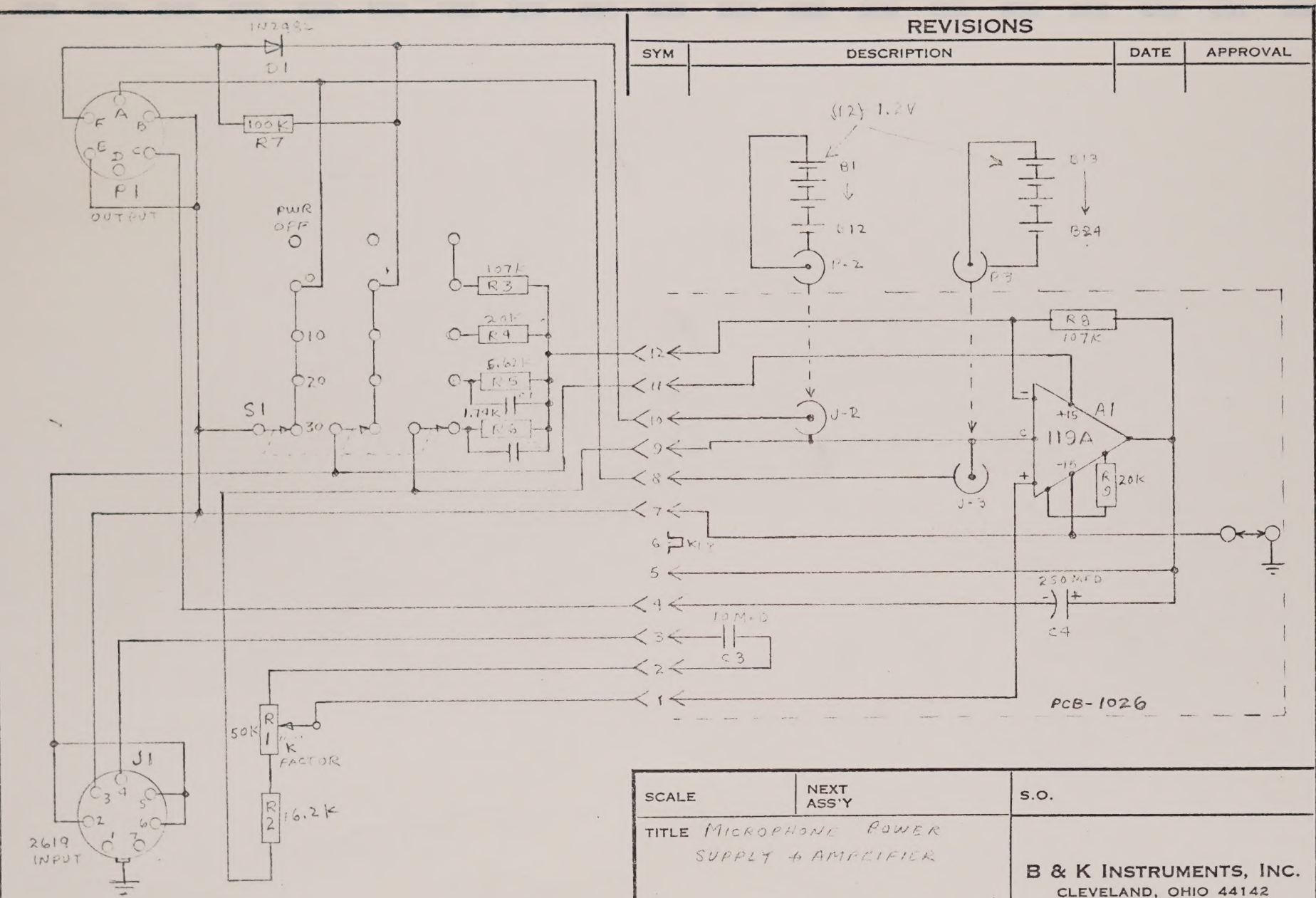
3.3 After calibration, the use of the 141 is straight forward. The signal input to the unit is modified by the gain dB settings, and in combination with the calibration settings, will yield voltage outputs which are related to SPL sound level indications.

3.4 Battery Charging - The 141 has been designed for 400 hour operation before battery recharging is required. The exact time for recharging may be determined by logging operating time or monitoring battery voltage. Charging current should be monitored and can be

a twelve hour charge at .150 amp or a trickle charge of .015 amp continuous. Use pins F & A for recharging unit, pin F is positive, and pin A is negative connections. Approximately thirty volts at 150 mA will be required, and it is advised that charging current be monitored and charging voltage adjusted for the charge current required.

PARTS LIST - MODEL 141 (Dwg. A-1093)

ITEM	DESCRIPTION	PART NUMBER
R1	Potentiometer, 50 K, ±10%	141-503VR
R2	Res., Precision, 1/2w, 1% - 16.2K	141-16.2KR
R3, 8	Res., Precision, 1/2w, 1% - 107K	141-107KR
R4, 9	Res., Precision, 1/2w, 1% - 20K	141-20KR
R5	Res., Precision, 1/2w, 1% - 5.62K	141-5.62KR
R6	Res., Precision, 1/2w, 1% - 1.74K	141-1.74KR
R7	Res., Precision, 1/2w, 1% - 100K	141-100KR
C1	Cap. Mica, 390 pF	141-390C
C2	Cap. Mylar, .0022 MFD	141-222CM
C3	Cap. Mylar, 100 MFD	141-106CM
C4	Cap. Electrolytic, 250 MFD, 25 V	141-250CE
D1	Diode - IN2482	141-2482D
P1	Connector, 6 Pin	141-172CN
P2, 3	Connector, BNC - 36775	141-36775CN
J1	Connector, Microphone	141-JJ703
J2, 3	Connector, BNC 31-221	141-31221CN
S-1	Switch, Rotary-PA2010	141-2010S
A-1	Amplifier, Operational	141-119A
B1 to B24	Battery, Nickel Cadmium	141-41BA


REVISIONS
SYM
DESCRIPTION
DATE
APPROVAL
IN2482
D1
100K
R7
P1
OUTPUT
PWR OFF
S1
10
20
30
107K
R3
20K
R4
5.62K
R5
1.74K
R6
(12) 1.2V
B1
B12
P2
B13
B24
P3
R8
107K
J-2
J-3
A1
119A
+15
-15
R9
20K
12
11
10
9
8
7
6
K1
5
4
3
2
1
250 MFD
C4
10 MFD
C3
PCB-1026
50K
R1
K FACTOR
R2
16.2K
J1
2619
INPUT
SCALE
NEXT ASS'Y
S.O.
TITLE MICROPHONE POWER SUPPLY & AMPLIFIER
B & K INSTRUMENTS, INC.
CLEVELAND, OHIO 44142
DRAWN LJB
DATE 10-31-69
CHECKED LJB
DATE 10-31-69
APPROVED
DATE
SIZE
DRAWING NUMBER
ISSUE
A
1093
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